



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/981,519	03/17/1998	JOHANN PFEIFFER	032287-001	8175

21839 7590 07/29/2003

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

NGUYEN, STEVEN H D

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/981,519

Applicant(s)

PFEIFFER, JOHANN

Examiner

Steven HD Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 5/22/03 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/981519 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As claims 1 and 11, the recitation “modulating and demodulating the digital data using DMT modulation”.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 8-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich (USP 4644534) in view of May (USP 5835536).

As claims 8-9 and 11, Sperlich discloses a system comprising a time management unit (Fig 5, Ref control unit of central unit Z and control unit of substation U) within the first and second stations for separating digital data to be transmitted and digital data to be received by time division multiplexing (Fig 3, the digital data is transmitted between the stations using a time division multiplexing in frame which has a period T_r which is subdivided into period of down stream and period of upstream) wherein the time management unit including means for subdividing an associated multiplex time frame into a pre-determinable number of time slots (Fig 3 and col. 2, lines 47-64); means for assigning a first subset K of time slots exclusively to one transmission direction (Fig 3, T_s) and means for assigning a second subset, N-K, on time slots comprising the remaining number time slots in the multiplexing frame exclusive to the other transmission direction (Fig 3, Ref T_e) and a transmitter that transmits the digital data bi-directionally between the first and the second station via two wire line utilizing the subdivided multiplexing time frame wherein only one of a transmitting operation and a receiving operation is performed at any given time in each station (Fig 5, Ref transmitter and col. 5, lines 8-56). However, Sperlich fails to disclose a DMT modulator for modulating the digital data and a DMT demodulator for demodulating the modulated digital data into digital data. In the same field of endeavor, May discloses a DMT modulator for modulating the digital data and a DMT demodulator for demodulating the modulated digital data into digital data (Figs 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a DMT modulator for modulating the digital data and a DMT

Art Unit: 2665

demodulator for demodulating the modulated digital data into digital data as disclosed by May's system into Sperlich's system. The motivation would have been to utilize the transmission capacity of each twisted pair connection.

As claims 2 and 12-14, Sperlich and May do not disclose a number of time slots in a frame having a length of 20.625 are 30 wherein each time slot has a length 625 micro second and K is 1. However, it would have been obvious to one skill in the art to divide a frame into the transmitted and received time slots such as the number of time slots divide into any numbers and using any number time slot for transmitted data.

6. Claims 2, 6, 8-9 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich (USP 4644534) in view of Cioffi (USP 5625651).

As claims 2, 6, 8-9 and 10-12, Sperlich discloses a system comprising a time management unit (Fig 5, Ref control unit of central unit Z and control unit of substation U) within the first and second stations for separating digital data to be transmitted and digital data to be received by time division multiplexing (Fig 3, the digital data is transmitted between the stations using a time division multiplexing in frame which has a period T_r which is subdivided into period of down stream and period of upstream) wherein the time management unit including means for subdividing an associated multiplex time frame into a pre-determinable number of time slots (Fig 3 and col. 2, lines 47-64); means for assigning a first subset K of time slots exclusively to one transmission direction (Fig 3, T_s) and means for assigning a second subset, N-K, on time slots comprising the remaining number time slots in the multiplexing frame exclusive to the other transmission direction (Fig 3, Ref T_e) and a transmitter that transmits the digital data bi-directionally between the first and the second station via two wire line utilizing the subdivided

multiplexing time frame wherein only one of a transmitting operation and a receiving operation is performed at any given time in each station (Fig 5, Ref transmitter and col. 5, lines 8-56).

However, Sperlich fails to disclose a DMT modulator for modulating the digital data and a DMT demodulator for demodulating the modulated digital data into digital data. In the same field of endeavor, Cioffi discloses a DMT modulator for modulating the digital data and a DMT demodulator for demodulating the modulated digital data into digital data (Figs 3-4) and a method of selecting a carrier frequency of DTM for synchronization with frequency powered signal to reduce interference (Col 5, lines 1-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a DMT modulator for modulating the digital data and a DMT demodulator for demodulating the modulated digital data into digital data as disclosed by Cioffi's system into Sperlich's system. The motivation would have been to utilize the transmission capacity of each twisted pair connection.

As claims 2 and 12-14, Sperlich and Cioffi do not disclose a number of time slots in a frame having a length of 20.625 are 30 wherein each time slot has a length 625 micro second and K is 1. However, it would have been obvious to one skill in the art to divide a frame into the transmitted and received time slots such as the number of time slots divide into any numbers and using any number time slot for transmitted data.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich and May/Cioffi as applied to claim 8 above, and further in view of Kageyama (USP 4144522).

Sperlich and May/Cioffi fail to disclose a step of storing a transmission data into a buffer for transmitting to the receiving node and using ARQ method; However, in the same field of

Art Unit: 2665

endeavor, Kageyama discloses a method of using an ARQ method for transmitting the data over a transmission channel until it does not receive a notifying of data transmission error from the received station (Col 20-36).

Since a method of using ARQ for retransmitting the data blocks is well known in the art at the time of invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method of ARQ for retransmitting the data blocks when an error occurs as taught by Kageyama's system into the system of Sperlich and May/Cioffi. The motivation would have been to control the occurrence of an error in data transmission between the transmitting and receiving sides.

8. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich and May/Cioffi as applied to claim 8 above, and further in view of Huebner (USP 3798608).

Sperlich and May/Cioffi fail to disclose a claimed invention. However, in the same field of endeavor, Huebner discloses in the event of error the data are modified by a logic inversion before retransmitting (Col 7, lines 57 to col 8, lines 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method of detecting an error in the transmitted data, modifying the transmitted data by a logic inversion before retransmitting the data as taught by Huebner's system into the system of Sperlich and May. The motivation would have been to reduce the retransmitted data if error occurs during the transmission.

9. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich and May as applied to claim 8 above, and further in view of Cioffi (USP 5625651).

Sperlich and May fail to disclose the claimed invention. However, in the same field of endeavor, Cioffi discloses a method of selecting a carrier frequency of DTM for synchronization with frequency powered signal to reduce interference (Col 5, lines 1-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a teaching of Cioffi such as selecting a carrier frequency according to the powered signal to reduce the interference into Sperlich and May's system. The motivation would have been to coordinate and reliably interpret signals sent from the remotes.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sperlich and May/Cioffi as applied to claim 8 above, and further in view of Bowman (USP 5151896).

Sperlich and May/Cioffi fail to disclose the claimed invention. However, in the same field of endeavor, Bowman discloses a method of allowing the TDM being carried out synchronously on the two wire lines with a result that either transmission or reception is performed simultaneously on the two wire lines (Col 14, lines 47-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method of allowing a station to transmit or reception simultaneously as taught by Bowman into the system of Sperlich and May/Cioffi.

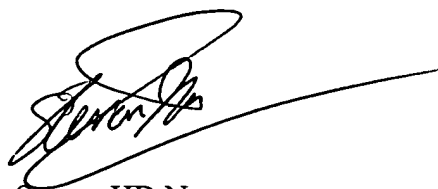
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (703) 308-8848. The examiner can normally be reached on 8-5.

Art Unit: 2665

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on (703) 308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

A handwritten signature in black ink, appearing to read 'Steven HD Nguyen', with a long horizontal flourish extending to the right.

Steven HD Nguyen
Examiner
Art Unit 2665
July 23, 2003